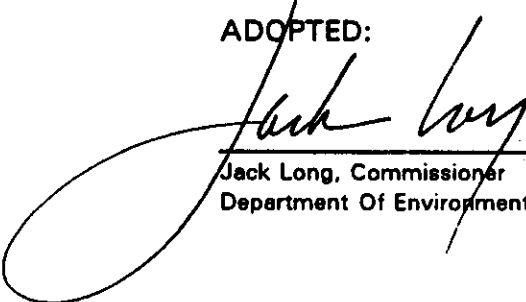


Department Of Environmental Conservation Floor Drain Procedure

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ADOPTED:



Jack Long, Commissioner
Department Of Environmental Conservation

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Date

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I. Introduction

The Department Of Environmental Conservation (DEC) regulates surface and subsurface discharges of fluid waste from floor drains at non-residential businesses and facilities. Discharges from floor drains to the ground surface (a practice referred to as **daylighting**) are managed by the Permits, Compliance, And Protection Division, while discharges from floor drains to the subsurface (a practice Federally defined as **injection**) are regulated by the Underground Injection Control (UIC) Program of the Water Supply Division.

The term injection well is very broad and is defined as "any opening in the ground..." (10 VSA, Chapter 47, Subchapter 1, §1251 (15)). The Federal definition of an injection well is just as broad; "a "well" into which "fluids" are being injected" (40 CFR §144.3). (Further definitions are provided in the "Authority" section of this document.) There are five classes of injection wells regulated by the UIC Program. This Procedure addresses selected subclasses of Class V injection wells--those which involve floor drains. USEPA educational materials describe the five classes of injection wells as follows. Classes I, II, and III are high-tech, deep injection wells used to inject non-hazardous and hazardous wastes. Class IV injection wells are shallow low-tech injection wells used to inject hazardous wastes into or above formations that contain underground sources of drinking water and are **prohibited** nationwide. Class V injection wells are low-tech, shallow wells used to inject non-hazardous fluids into or above formations that contain underground sources of drinking water.

In years past, regulation of floor drain discharges has been somewhat inconsistent within the DEC. Daylighting of floor drain discharges has been managed, but not regulated, by both the Regional Offices and by the Permits, Compliance, And Protection Division. The regulated community has reported receiving contradictory information regarding daylighting by various Programs within the DEC over the years while the DEC had neither formally endorsed nor disclaimed daylighting. Likewise, no formal criteria for daylighting have been developed until now. Somewhat differently, regulation of injections of floor drain wastewaters has been problematic within the UIC Program over the years. The Federal regulations (40 CFR Part 144.24) authorize floor drain injection "until further requirements under future regulations become applicable" (which has not occurred yet). However, the State statute and Rule require a permit for such injection. Unfortunately, the permitting portion of the existing (1984) Vermont UIC Rule was written to regulate higher-tech deep well injection. Thus, obtaining an UIC permit for injection of floor drain wastewaters puts an extreme financial burden on applicants due to the high technical level of hydrogeologic data required for such low-tech, shallow systems. The result has been that injection of floor drain waste was not actively regulated and no UIC permits have been issued since the Program's inception.

This document serves to formalize the DEC's procedure of dealing with floor drain discharges from this Procedure's effective date forward. Floor drain daylighting criteria are herein established and steps towards securing authorization of floor drain injection are listed. These steps towards securing authorization of floor drain injection are not specifically addressed in the UIC Rule but are addressed within the Federal regulations. Since the Vermont UIC Rule unduly regulates floor drain injections, the UIC Program intends to observe the interpretations listed in this Procedure until the Vermont UIC Rule has been revised. (This Rule is presently under review for revision.)

II. DEC Floor Drain Procedure

This Floor Drain Procedure addresses floor drain discharges to both the ground surface (daylighting) and to the subsurface (injection). Floor drain discharges that daylight are managed by the Permits, Compliance, And Protection Division; while floor drain discharges to injection wells are regulated by the UIC Program of the Water Supply Division.

A. Daylighting

Floor drain discharges can be approved to daylight provided that:

- 1) the discharges will not discharge directly to "waters of the state,"
- 2) the discharge is very infrequent and of very low volume,
- 3) the discharge is innocuous and does not contain hazardous materials or wastes, and
- 4) the discharge is of very low risk to the environment. Examples are sumps or floor drains from residential buildings, offices, dry storage warehouses, retail stores and restaurants, and snowmelt from vehicles in non-maintenance areas.

Floor drain discharges are prohibited to daylight if the discharges result from:

- 1) vehicle maintenance areas,
- 2) vehicle washing facilities,
- 3) air compressor pads,
- 4) wet-process manufacturing and/or production such as slaughterhouses, dairy processing plants, and metal finishing plants.

The effluent from these facilities must be treated and disposed of properly after receiving the appropriate discharge permit.

All daylighting proposals will be referred to the Permits, Compliance, And Protection Division for review.

B. Injection

All floor drains that discharge fluids to subsurface, on-site waste disposal or treatment systems (injection wells) that are under Federal Class V, further defined as subclasses 5W20 and 5X28, (these classifications are defined in the "Floor Drain Injection Narrative" section), are required to register with the UIC Program. (The term "fluid" within this Procedure means any waste that is not domestic and includes liquids, semi-solids, sludges, and gases, but does not include sewage.) Registration is the first step to secure authorization for floor drain discharges to injection wells. If such a floor drain/injection well system is not registered with the UIC Program, it must be closed. From information obtained from registration, some floor drain/injection well systems will be required to obtain UIC Program permits. Permits are presented in the "Floor Drain Injection Narrative" section of this Procedure. Proposed floor drain/injection well systems will require UIC

permits prior to construction. If the floor drain/injection well system cannot meet the UIC Program permit requirements, the injection is prohibited and the floor drain/injection well system must be closed or must not be constructed. **Underground injection of any hazardous waste to any such floor drain/injection well system is prohibited.** All floor drain/injection well system issues will be referred to the UIC Program in the Water Supply Division.

III. Authority

Below are pertinent portions of the Vermont Statutes Annotated and the Environmental Protection Regulations which apply to this DEC Floor Drain Procedure.

A. 10 VSA Chapter 47 Water Pollution Control

Subchapter 1. Water Pollution Control

§ 1251. Definitions

(3) **"Discharge" means the placing, depositing or emission of any wastes, directly or indirectly, into an injection well or into the waters of the state.**

(12) **"Waste" means effluent, sewage or any substance or material, liquid, gaseous, solid or radioactive, including heated liquids, whether or not harmful or deleterious to waters; provided however, the term "sewage" as used in this chapter shall not include the rinse or process water from a cheese manufacturing process.**

(14) **"Injection well" means any opening in the ground used as a means of discharging waste except for a dry hole not exceeding seven feet in depth which is constructed as, and used solely for the disposal of domestic waste.**

(15) **"Indirect discharge" means any discharge to groundwater, whether subsurface, land-based or otherwise.**

§ 1259 Prohibitions

(a) **No person shall discharge any waste, substance or material into waters of the state, nor shall any person discharge any waste, substance or material into an injection well or discharge into a publicly owned treatment works any waste which interferes with, passes through without treatment, or is otherwise incompatible with those works or would have a substantial adverse effect on those works or on water quality, without first obtaining a permit for that discharge from the secretary.** This subsection shall not prohibit the proper application of fertilizer to fields and crops, nor reduce or affect the authority or policy declared in joint house resolution 7 of the 1971 session of the general assembly.

§ 1263 Discharge permits

(a) **Any person who intends to discharge waste into the waters of the state or who intends to discharge into an injection well or who intends to discharge into a publicly**

owned treatment works any waste which interferes with, passes through without treatment, or is otherwise incompatible with that works or would have a substantial adverse effect on that works or on water quality shall make application to the secretary for a discharge permit. Application shall be made on a form prescribed by the secretary. An applicant shall pay an application fee in accordance with 3 VSA §2822.

B. Vermont Environmental Protection Regulations Chapter 11 Underground Injection Control Rule (Formerly cited as Water Pollution Control Regulations Subchapter 13.UIC)

§ 13.UIC.5. Application For A Permit: Authorization By Permit

(a) Permit application. Except as provided in § 13.UIC.25 (authorization by rule), all underground injections into Class I, II, III, or V wells are prohibited unless authorized by permit. Any person who is required to have a permit (including new applicants, owners or operators if different from the owner, and permittees with expiring permits) shall complete, sign, and submit an application to the Secretary on forms provided by the Secretary which are incorporated into these regulations and attached at Appendix I.

§ 13.UIC.25. Authorization Of Underground Injection By Rule - General Permit

(a) Limitations. The provisions of this section apply only to Class V injection wells as follows:

(2) Injections of waste into Class V well other than groundwater heat pump return wells as described in part (a) (1) of this section are hereby issued a general permit under this subchapter provided that:

(i) The Class V injection well is currently authorized under 10 VSA Chapter 159 (Waste Management) and the regulations promulgated thereunder, or the Environmental Protection Rules adopted by the Agency effective September 10, 1982, under the provisions of 18 VSA § 1301 - 1306; and

(ii) the permits and certificates issued under the authorities described in paragraph (a) (2) (i) of this section contain the necessary conditions and provisions to prevent the violation of drinking water standards in underground sources of drinking water and adverse effects on the health of persons.

(c) Requiring Individual Permits. The Secretary may require an individual permit under these regulations for Class V wells when:

(1) There is reason to believe that a discharge into a Class V injection well may cause a violation of any drinking water standard in an underground source of drinking water, or adversely affect the health of persons;

(2) The Class V injection well is not in compliance with one or more requirements of the general permit;

(3) The Class V injection well is no longer within the category of wells and type of operations authorized by general permit under this section; and

(4) The protection of USDWs requires that the injection operation be regulated by requirements such as for corrective action, monitoring and reporting, or operation, which are not contained in a general permit.

(d) All Class V wells not described under Subsection 13.UIC.25 (a) require an individual permit from the Secretary under these regulations.

IV. Discussion

These portions of 10 VSA Chapter 47 and Environmental Protection Rule Chapter 11 (UIC Rule) have not been enforced by the UIC Program since the program's inception. It is clear that these floor drain/injection well systems owners/operators are not in compliance. The UIC Program already has authority under a Memorandum Of Agreement between the USEPA and the Agency Of Natural Resources dated 1984 (state primacy), and under 10 VSA Chapter 47 Water Pollution Control Rule to address these systems floor drain/injection well systems, therefore, the DEC implements this Procedure.

V. Floor Drain Injection Narrative

Floor drain/injection well systems are found in a variety of facilities, including automobile body shops, repair/maintenance garages, automotive salvage garages, car washes, large equipment dealerships, metal plating businesses, photochemical businesses, welding operations, tanneries, laboratories, laundries, dry cleaners, electrical power generation plants, schools, hospitals, etc. The floor drains may be found within the building in a service area, storage area, parts washing area, industrial process area, etc. or may be found outside in a loading dock area, parking area, or vehicle wash area.

The specific, Federally defined, types of Class V injection wells receiving discharges from floor drains that will be regulated under the injection portion of this Procedure are: (5W20) Industrial Process Water And Waste Disposal Wells and (5X28) Automotive Service Station Disposal Wells. Subclass 5W20 includes wells used to dispose of a wide variety of waste and wastewaters from industrial, commercial, or utility processes. Industries include refineries, chemical plants, smelters, pharmaceutical plants, laundromats, drycleaners, tanneries, laboratories, petroleum storage facilities, electric power generation plants, car washes, electroplating industries, etc. Subclass 5X28 includes automobile service station disposal wells used to inject wastes from repair bay drains at service stations, garages, car dealerships, etc.

All floor drains discharging to injection wells pose some risk to groundwater quality. The UIC Program strongly endorses and encourages voluntary closure of existing floor drain/injection well systems and avoiding construction of new ones. Registration is required as a first step in securing authorization for all floor drain/injection well systems.

VI. Recommended/Prioritized Alternatives To Floor Drain/Injection Well Use

- 1) Eliminate the floor drain. Some facilities report to the UIC Program that despite the existence of the floor drain/injection well system, there is no appreciable discharge. When this is the case, the DEC recommends that floor drains be closed and sealed. All closures should be reported to the UIC Program.
- 2) Reroute the floor drain to discharge to a municipal sewer line, where available and where acceptable to the municipality, or discharge to a facility accepting the generated wastewater. When wastewaters are generated, the DEC considers this option to be the best available technology.
- 3) Collect wastewater in a storage tank and dispose of via a local wastewater treatment plant or a hazardous waste hauler as appropriate. You must first determine if the wastewater is a hazardous waste before collecting into a storage tank. If the wastewater is determined to be a hazardous waste, you may need a permit from the Hazardous Materials Management Division. Guidance may be sought from the Hazardous Materials Management Division.
- 4) Reroute the floor drain to daylight. Approval must first be obtained from the Permits, Compliance, And Protection Division.

VII. Registration Of Floor Drain/Injection Well Systems

Registration is now required of all 5W20 and 5X28 (industrial, commercial, utility, and automotive) floor drain/injection well systems used for the disposal of fluid waste. Some of the information that the UIC Program will obtain from registration includes ownership and location of floor drain/injection well systems, types and amounts of wastewaters being disposed to the floor drain/injection well system, and the type of business where floor drain/injection well systems exist. There will be no fee for registration. Registration will remain valid for the life of the floor drain/injection well system unless there is a change in the information provided to the UIC Program in the original registration form.

VIII. UIC Program Permits For Floor Drain/Injection Well Systems

Individual UIC permits are required for 5W20 and 5X28 floor drain/injection well systems. The schedule under which this permit requirement will be enforced is listed in the "Strategy For Implementation" section of this Procedure. Individual UIC Permits require submittal of applications and fees. The discharges to 5W20 and 5X28 floor drain/injection well systems are generally considered to pose a contamination risk to groundwater. The permits issued will have conditions to protect groundwater quality.

Some floor drain/injection well systems create too high a risk to qualify for Individual UIC permits. These may include 5X28 floor drain/injection wells that receive waste from floor drains in areas where vehicle maintenance is performed or where hazardous materials and/or hazardous waste is stored or used. Other floor drain/injection well systems may be considered too high a risk if the UIC Program has evidence to suspect a violation of primary drinking water or groundwater quality standards caused by the waste injection. Such floor drain/injection well systems will not qualify for Individual UIC permits and must be closed.

Applications for Individual UIC Permits will require the following submittals:

- 1) A detailed map showing the hydrogeology of the site and the effluent path of migration;
- 2) A "to-scale" schema or cross-sectional drawing of the floor drain/injection well system showing the high seasonal watertable;
- 3) Descriptions of effluent entering the floor drain/injection well system including known or expected constituents and their concentrations and volumes;
- 4) A map of water supply wells (both private and public) within the effluent's path of migration;
- 5) A schedule of maintenance for disposal system, i.e., any septic tank, drywell, etc.;
- 6) A schedule of maintenance for sand/grit trap(s) and oil-water separator(s)

(these devices are required for 5X28 and 5W20 floor drain/injection well system systems);

- 7) A map locating a minimum of three monitoring wells--one upgradient and two downgradient of discharge;
- 8) A detailed effluent, groundwater level, and groundwater quality monitoring plan in accordance with the UIC Program requirements; and
- 9) Background groundwater quality test results from proposed discharge area.

The Individual UIC Permits will be valid for five years, provided that the discharge does not cause any violation of primary drinking water and groundwater quality standards in underground sources of drinking water. All of the following events are required to be reported to the UIC Program. Failure to report any of these events may result in revocation of the issued Individual UIC permit.

- 1) Violation of any primary drinking water or groundwater quality standard specified as a monitoring parameter within the issued permit.
- 2) Failure to perform monitoring of wastewater discharged for all parameters indicated by the UIC Program within the permit. Monitoring will be prescribed as quarterly for year one and semiannually for years two through five with provisions for reduction to annual monitoring.
- 3) Violation of restricted disposal of hazardous wastes into the floor drain/injection well system. If hazardous wastes are disposed of to the floor drain/injection well system the responsible person is to immediately cease the discharge and report to the UIC Program within 24 hours.
- 4) Violation of restricted vehicle maintenance in the floor drain area. If maintenance is to occur in these areas, the floor drain(s) is required to remain temporarily plugged during vehicle maintenance and residuals from maintenance are to be thoroughly removed before unplugging the floor drain(s) for other uses.
- 5) Failure to keep records. Records are to be kept regarding all monitoring, spills, and maintenance of the floor drain/injection well system, i.e., septic tank pumping.
- 6) Violation of restricted vehicle washing in floor drain area. Vehicle washings discharging to a floor drain/injection well system is permissible only for exterior vehicle washing. No such discharge permit will be issued for "under-the-hood," "under vehicle," heavy equipment, or parts washing.
- 7) Failure to comply with Best Management Practices (BMPs). All businesses that obtain Individual UIC Permits will be required to follow prescribed BMPs. BMPs are ways in which a business can minimize pollution production, save money in daily operations, increase safety in the workplace, etc.

- 8) Failure to report any change in original permit application submittals. The applicant of the issued Individual UIC Permit is required to report to the UIC Program within 48 hours of any changes to information submitted to the UIC Program within the original application.

The above listed eight permit criteria reflect interpretations to the existing (1984) Individual UIC Permit application. The existing (1984) UIC Rule was written to regulate high-tech, deep injection wells. The existing permit criteria within the UIC Rule are subsequently inappropriate for such low-tech, shallow injection wells (e.g., the UIC Rule was written to require a quarter-mile radius hydrogeologic study to be performed and submitted as part of the floor drain/injection well application). The interpretations of permit criteria presented in this Procedure are intended to ease the burden on small businesses and to more accurately reflect the necessary information needed to determine the impact of these floor drain/injection well systems on the groundwater.

IX. Best Management Practices For Floor Drain Use

Below are some general BMPs that various businesses and industries can follow whether daylighting, injection, containment, or municipal sewer system disposal is chosen for floor drain wastewaters.

- 1) Keep all hazardous materials and wastes from draining into the floor drain. This includes, but is not limited to, spilled fuels, chemicals, or other products; contaminated floor, vehicle, equipment, or parts washwater; contaminated soils or snowmelt.
- 2) Limit floor drain use to dispose of excess water due to emergency fire protection devices, seasonal rains, and uncontaminated snowmelt. All other approvable floor drain uses will be prescribed by the UIC Program and specifically described in an Individual UIC Permit.
- 3) Keep maintenance of vehicles or equipment separate from an area draining to a floor drain and/or keep floor drain plugged during vehicle maintenance.
- 4) Keep storage of hazardous materials, hazardous wastes or other synthetic fluid products separate from floor drain area.
- 5) Use and maintain a sand/grit trap for floor drains.
- 6) Use and maintain an oil/water separator for floor drains.
- 7) Keep surrounding floor swept free of debris daily. Properly dispose of solid wastes collected. Contact the Solid Waste Management Division for guidance.
- 8) Keep surrounding floor washed weekly. If floor washwater is suspected to contain any hazardous wastes, it is prohibited from being discharged to the floor drain--the washwater should be contained and hauled as a hazardous waste. Contact the Hazardous Materials Management Division for guidance.

- 9) Use drip pans in vehicle maintenance areas to prevent drips from discharging to the floor and draining to the floor drain.
- 10) Use dry absorbent pads, rags, corn cob material, or granular absorbents to clean up any spill or drip that does occur on floor. Properly dispose of the solid waste that results. Contact the Solid Waste Management Division for guidance.
- 11) Use wet vacuum to contain any indoor spills. If the spill is a hazardous waste, it is prohibited from being discharged to the floor drain--the waste should be hauled as a hazardous waste. Contact the Hazardous Materials Management Division for guidance.
- 12) Properly dispose of all wastes in accordance with the Hazardous Materials Management Division and Solid Waste Management Division's regulations. Contact these Divisions for guidance.
- 13) Minimize wastewater production in daily activities.
- 14) Train employees of these and other site-specific best management practices.
- 15) Contact the Pollution Prevention Division for non-regulatory information.

X. Strategy For Implementation Of Procedure

The daylighting aspect of the DEC Floor Drain Procedure will be implemented immediately by the Permits, Compliance, And Protection Division while the injection aspect will be slowly phased-in by the UIC Program of the Water Supply Division as a means to alleviate immediate financial burdens on small businesses and in a manner that appropriately addresses the risk of the actual discharges. Staffing limits also dictate the phased-in approach of the UIC Program portion of the Procedure. Below is the order to which the UIC Program portion will be implemented.

- 1) All existing 5W20 and 5X28 floor drain/injection well systems that inject fluids are required to register with the UIC Program or close the floor drain/injection well systems. (Registration or closure of floor drain/injection well systems will be considered a compliance measure for floor drain/injection well systems that are included on EPA's UIC Exceptions List.)

This action will be effective with the effective date of this Procedure.

- 2) All new projects applying for Act 250 land use permits that have either 5W20 or 5X28 floor drain/injection well systems will be required to first register those proposed floor drain/injection well systems. These systems must obtain Individual UIC Permits prior to construction of the floor drain/injection well system.

This action will be effective with the effective date of this Procedure.

- 3) AOT garages that have floor drain/injection well systems within wellhead protection areas (WHPAs) will be required to obtain Individual UIC Permits or close the floor drain/injection well systems.

This action was scheduled for FFY 94, but was accomplished FFY 93.

- 4) All facilities on EPA's UIC Exception List that are within WHPAs will be required to obtain Individual UIC Permits or close the floor drain/injection well systems.

This action will be accomplished by FFY 94.

- 5) All other AOT garages with floor drain/injection well systems are required to obtain Individual UIC Permits (unless the UIC Program has evidence to suspect violations of primary drinking water and groundwater quality standards) or close the floor drain/injection well systems.

This action was scheduled for FFY 95, but was accomplished FFY 93.

- 6) All other facilities on EPA's UIC Exception List will be required to close their floor drain/injection well systems or obtain Individual UIC Program permits if the floor drain/injection well system is 5W20 or 5X28.

This action will be accomplished by FFY 95.

- 7) All other 5W20 and 5X28 floor drain/injection well systems that are within WHPAs will be required to obtain Individual UIC permits or close their floor drain/injection well systems following further statewide public outreach and notice.

This action will be effective by FFY 96.

- 8) All other remaining 5W20 and 5X28 floor drain/injection well systems will be required to obtain Individual UIC permits.

This action will be effective by FFY 97.

When there is sufficient evidence (e.g., referral from Hazardous Materials Management Division, disposal of hazardous materials into floor drain/injection well system observed in an UIC Program inspection ,etc.) for the UIC Program to suspect violations of primary drinking water and groundwater quality standards in the discharged wastewater to any floor drain/injection well system, and the floor drain/injection well system owner cannot demonstrate otherwise (through monitoring), closure will be required.

The first five actions listed have already been implemented. Actions six through eight will occur as staffing permits. The phased-in approach of this Procedure is designed to give facility owners time to find disposal methods alternative to injection of floor drain wastewaters. The UIC Program has and will continue to seek voluntary closure of existing floor drain/injection well systems and prevent the construction of such new systems. **Essentially, facilities will have to close their floor drain/injection well systems or will have**

to obtain Individual UIC Permits.

XI. State Program Directory

The following list includes those State programs responsible for daylighting and injection of floor drain wastewaters and includes other Divisions mentioned within this document. This information is presented for the public.

Permits, Compliance, And Protection Division
(802) 241-3822

Water Supply Division
Underground Injection Control Program
(802) 241-3400

Hazardous Materials Management Division
(802) 241-3888

Solid Waste Management Division
(802) 241-3444

Pollution Prevention Division
1-800-974-9559